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# **Export decisions within Taiwanese electrical and electronic SMEs: The role of management characteristics and attitudes**

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## **Abstract**

In this globalized environment, Taiwanese firms have been very successful in achieving growth via international market expansion. In particular, the Taiwanese electronics industry has shown a dynamism lacking in comparable industries around the world. However, in recent years there has been a move by many of the larger Taiwanese manufacturing firms to outsource their manufacturing to low-cost producers such as China in order to remain competitive. Conversely, most Taiwanese small-to medium-sized enterprises (SMEs) have retained their production facilities in Taiwan. These SMEs seek to expand their sales beyond the domestic market by employing an export strategy, making a significant socioeconomic contribution to the domestic and regional economies. This paper highlights the key dimensions such as enhancing factors (benefits/advantages), inhibiting factors (barriers/costs), and managerial factors (characteristics/commitment) that play an important role in the internationalization of SMEs located within the Taiwanese electronics industry. A logistic regression model is used to predict the probability of a firm being an exporter.

**Keywords:** exporter, management commitment, logistic regression

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For a nation and its surrounding regions, exports represent additional jobs, a positive trade balance, and a multitude of other benefits through the multiplier effect. Further, exporting is a vehicle for economic development and provides resources to support other economic activities (Czinkota & Ronkainen, 2001; Leonidou, Kaminarides, & Hadjimarcou, 2004). For businesses, exporting generates funds for reinvestment and growth, spreads business risks across different markets, and exploits operating capacity (Terpstra & Sarathy, 2001; Leonidou *et al.*, 2004).

Many scholars have investigated the role and contribution of small-and medium-sized enterprises (SMEs) in exports (Graham, 1999; Samiee & Walters, 2002; Zou, Taylor, & Osland, 1998). For example, Hessels and van Stel (2007) argue that export-oriented entrepreneurship is more important for achieving high economic growth rates than entrepreneurial activity in general. International activity by small firms contributes strongly to higher levels of competition and economic growth. Thus, governments are concerned with generating greater export volume and increasing the focus on the competitiveness of SMEs in international markets (Doole, Grimes, & Demack, 2006).

In a relatively small domestic market such as Taiwan, exporting is important for both the national economy and for the firms involved. As the electronics industry in Taiwan shifts its labor-intensive manufacturing facilities to industrial parks in China and Vietnam, Taiwan's SMEs are aggressively seeking opportunities overseas for business expansion (Tai & Hung, 2006). Due to the limited domestic market in Taiwan, the Taiwanese government has been actively promoting trade and export opportunities for Taiwanese manufacturers by holding trade exhibitions and assisting local firms to attend international exhibitions to promote their products (e.g. see <http://www.taiwantrade.com.tw/>; <http://investintaiwan.nat.gov.tw>). While the decision to export and the key success factors behind internationalization have been the focus of a considerable number of studies worldwide, the examination of the export behavior of Taiwanese firms in general and SMEs in particular has been limited (Sim & Pandian, 2003). In addition, research in divergent industries, divergent socio-cultural settings, and different economic times yields conflicting results in relation to many of the factors hypothesized to impact the export behavior of firms (Philp, 1996). Amine and Cavusgil (1983) made a persuasive argument for the need to minimize the impact of uncontrollable variables in research. Thus, an examination of the Taiwanese electrical and electronics industry is a worthwhile pursuit for not only understanding the export behavior of firms within that important industry, but also contributing to the literature by undertaking a study focusing on a single industry within a relatively homogenous geographic, economic and political environment. This enables a degree of control for variations in the external environmental influences on the firm's behavior and allows for a more effective and holistic examination of the firm-specific and managerial variables that affect the internationalization process (Dunning, 1988; Wickramasekera & Oczkowski, 2004). In addition, it clarifies some contradictory findings within the literature relating to explanatory variables within internationalization such as the impact of the age of the manager (Philp, 1998; Caviello & MacAuley, 1999).

The study develops a logistic regression model that identifies the export behavior of Taiwanese SMEs based on a survey of 103 firms. This paper initially presents a review of the literature that focuses on factors aiding and inhibiting export market development, as well as the managerial characteristics impacting on the decision to export. It then discusses the research methodology and the conceptual model used for the study. Finally, the findings of the study, its contributions to theory and policy, its limitations, and some directions for future research are discussed.

## Literature Review

Given the importance of exporting to both nations and firms, an array of international research has focused on understanding the factors that differentiate exporters from non-exporters. A number of papers have attempted to integrate this literature (e.g. Andersen, 1993; Calof & Beamish, 1995; Crick & Katsikeas, 1995; Leonidou, 1995; Rialp, Rialp, Urbano, & Villant, 2005). This review focuses on these papers in order to build on their findings. In addition, because managers' perceptions have been identified as crucial for international success, this review focuses on factors perceived by management to enhance or inhibit export market development (Calof *et al.*, 1995).

### *Perceived benefits and advantages of exporting*

Expectancy Theory posits that effort is increased when rewards are offered and expected (Vroom, 1964). Studies conducted around the world find that management perceptions of the benefits that accrue from exporting are key to determining the internationalization orientation of a firm. These perceptions revolve around export profitability (Louter, Ouwerkerk, & Bakker, 1991), protection against an economic downturn at home (Morgan & Katsikeas, 1997), an ability to exploit economies of scale, excess production capacity (Wilkinson & Barrett, 1987), exports that assist in developing domestic markets (Axinn, 1988), the limited size of the domestic market (Kaynak & Kothari, 1984), and the ability to diversify markets (Sullivan & Bauerschmidt, 1991; Norvell, Andrus, & Gogumalla, 1995). Sullivan and Bauerschmidt (1991) compiled a composite factor comprising many of these variables.

An exporter can benefit from a heightened awareness of local market conditions through information sharing with foreign partners (Zhang, Cavusgil, & Roath, 2003; Wu, Sinkovics, Cavusgil, & Roath, 2007). Further, the owners of a firm can benefit if that firm spreads its sources of income over a set of activities that are diversified internationally (Meredith, 1984; Ahmed, Julian, Baalbaki, & Hadidian, 2006). In this study, we rely on these approaches to improve the reliability of the measure. Hypothesis 1 is thus formulated as follows:

*H<sub>1</sub>: Perceived or actual benefits of exporting have a positive effect on the export behavior of the firm.*

The competitiveness of a firm is essentially determined by an entrepreneur's ability to give their firm advantages over their competitors. Competitive advantage is the asymmetry among firms that allows one firm to compete better than its rivals (Ariyawardana, 2003). Other studies have questioned whether management initiates exports because of its confidence in the firm's competitive advantage. For example, Tesar (cited in Bilkey, 1978) examined management's perceptions of whether or not the firm had technological, marketing, financial, or price advantages on entering export markets. Firm attributes, such as the image quality of the firm, contractual linkages, the promotion of a unique product, terms of sale such as credit offering and competitive pricing (Chetty & Hamilton, 1993), and staff time (Cavusgil & Nevin, 1981) have been thought to influence the decision to export. However, there is some debate over the importance of price. Further, firms will establish foreign affiliates when they have strong ownership advantages (Rugman & Verbeke, 2004). Multinational firms often have knowledge of and experience in international marketing and have established international distribution networks in their home markets. This provides multinational firms with strong competitive advantages in the world market (Blomström & Kokko, 1998; Wei & Liu, 2006).

Several factors that enhance or diminish the overall competitiveness of a firm's products in the marketplace have been identified in the literature (Chadee & Kumar, 2001;

Wickramasekera *et al.*, 2004). These include production competitiveness (Philp, 1996), quality of product (Styles & Ambler, 1994; Chen, 1999), uniqueness of product (Louter *et al.*, 1991; Lim, Sharkey, & Kim, 1993), the position held by the firm within the industry (Cavusgil & Zou, 1994), efficient production (Lim *et al.*, 1993; Leonidou, 1995), marketing skills (Leonidou, 1995), and a good network of distributors (Blomström *et al.*, 1998; Wei *et al.*, 2006). Another important factor considered to impact on product competitiveness is price. Again, findings by various researchers tend to be contradictory (see Chetty *et al.*, 1993). As strong cooperation and the channel relationships of SMEs affect their export performance, an extra item examining “good network of distributors” was added to the study. Hypothesis 2 is thus formulated as follows:

*H<sub>2</sub>*: Perceived or actual firm-specific advantages positively relate to the export decision of a firm.

### ***Factors inhibiting export activity***

Prior research has found that the perceptions of export barriers are key and are negatively related to export involvement (Czinkota & Johnson, 1981; Dichtl, Leibold, Koglmayer, & Müller, 1984; Lim *et al.*, 1993). Internalization Theory argues that there are conditions under which it is more efficient for a firm to create an internal market rather than enter foreign ones (Coase, 1937; Fina & Rugman, 1996). The perceived difficulty of transferring resources affects the degree of market commitment, which leads to low internationalization intentions for firms (Johanson & Vahlne, 1977). Dunning (1988) points out that ownership-specific advantages, transfer advantages, and location advantages play an important role in the internationalization process. Thus, if firms perceive low advantages and high barriers in relation to export activity, they tend to be non-exporters. Further, Sullivan and Bauerschmidt (1989) and Sharkey, Lim, and Kim (1989) also consider barriers to exports.

Katsikeas and Morgan (1994) provide a synopsis of studies that identify barriers to exports. Based on these reviews, a number of variables related to export barriers can be identified, such as the rules and regulations of governments (Pavord & Bogart, 1975; Bilkey & Tesar, 1977), the size of the domestic market (Kaynak *et al.*, 1984), exchange rate variations, infrastructure factors (Bilkey, 1978), cultural factors, availability of export services, reliable foreign distributors, and the degree of competition in the domestic market (Ford & Leonidou, 1991) also have a bearing on the firm's decision to export. Other studies found that non-exporters perceive greater barriers to exporting than exporters (Bilkey *et al.*, 1977). For instance, Lim *et al.* (1993) explore the importance of three categories of export barriers: internal barriers, foreign market barriers, and domestic economic barriers. In studies conducted in the US, serious barriers to exporting were found to be insufficient export finance, foreign government restrictions, insufficient knowledge about market opportunities, inadequate product distribution services abroad, and a lack of foreign market connections (Leonidou & Katsikeas, 1996).

Regarding cost factors, export-related transaction costs can be defined as the costs of running export systems. They include *ex-ante* costs such as negotiating contracts and *ex-post* costs such as monitoring and enforcing agreements (Williamson, 1985; Peng & Ilinitich, 1998); search, negotiation, and monitoring/enforcement costs (Williamson, 1985); and payment collection cost (Li, 2001). Furthermore, a firm's price competitiveness and export performance could be improved by developing a low cost relative to competitors. This low cost might be as a result of technological innovation, a more efficient use of the workforce with a given technology level, or low-cost inputs that cannot be achieved by the competitors (Bobillo, Sanz,

& Gaite, 2007). Firms choose certain export arrangements in order to minimize the cost of achieving export sales (Reid, 1983). Other international studies have identified that input costs associated with production, such as the cost of labor, shipping, and raw material, inhibit export market development (Philp, 1996). There is similar evidence regarding the cost of hiring skilled managers (Katsikeas *et al.* 1994; Owen, 1993), exports inhibited by export regulation, exports inhibited by the cost of new plant capacity (Sullivan *et al.*, 1991), exports inhibited by the cost of export documentation (Bureau of Industrial Economics, 1990), transaction costs, and company-related costs (Lim *et al.*, 1993). Hypotheses 3 and 4 are thus framed as follows:

*H<sub>3</sub>*: Non-exporters perceive greater barriers to exporting than exporters.

*H<sub>4</sub>*: Non-exporters perceive greater cost to exporting than exporters.

### ***Firm's characteristics influencing the decision to export***

Many studies have identified the importance of managerial attitudes and characteristics to developing international markets and achieving international success (Aaby & Slater, 1989; Calof & Beamish, 1994; Lim *et al.*, 1993; Smith & Zeithaml, 1999). Cavusgil and Nevin (1981) find that the management expectation that a firm will export is a major factor in explaining why firms export. Further, a firm's human resources are valued not only for their role in implementing a given competitive scenario, but also for their role in generating strategic capability (Barney, 1991).

Top management with an "international orientation" (Bilkey, 1978) or "foreign market orientation" (Cavusgil *et al.*, 1981) has been considered an important factor in explaining the export behavior of firms. Hence, top management characteristics are important in formulating and effectively implementing an export strategy. Various management attributes have been identified as contributing to an international or foreign market orientation. Firms that support continuous learning through in-house training and development often focus on developing specific skills (e.g. language skills) and knowledge, which subsequently allows top managers to compete successfully in international markets (Chadee *et al.*, 2001). Brooks and Rosson (1982) consider the type and level of education to be important. Ethnic background (Simmonds & Smith, 1968), the ability to speak a foreign language (Brooks *et al.*, 1982; Swift, 1991), and the age of the manager (Bilkey, 1978) are also found to be positively correlated with exporting. However, the importance of these factors is debatable and it is more likely that this is indicative of other fundamental managerial attributes, such as foreign market knowledge (Johanson *et al.*, 1977). Other researchers have emphasized the importance of foreign travel and overseas work experience (Ford *et al.*, 1991), which could also be related to foreign market knowledge.

Cavusgil (1980) stresses that the interest and commitment of top management are a critical determinant of export success. Similar views have been expressed by other researchers (e.g. Aaby *et al.*, 1989; Chetty *et al.*, 1993). Firms that make a commitment to support exports significantly outperform firms that treat exports as a part of their domestic business (Beamish, Karavis, Goerzen, & Lane, 1999). Yeung (2002) distinguishes domestic entrepreneurship from transnational entrepreneurship because an entrepreneur is often well entrenched in his/her domestic market. A transnational entrepreneur needs to possess strong visions and foresight in order to position the future of his/her firm in an era of global competition. Thus, the personal characteristics of the decision-maker can be conducive to the firm's efforts to develop exports (Leonidou *et al.*, 2004). In this study, gender, age, language skill, and market commitment are investigated. Thus, Hypotheses 5 and 6 are presented as follows:

*H<sub>5</sub>*: The managerial characteristics of a firm's managers are positively related to the export decision of a firm.

*H<sub>6</sub>*: Managerial commitment has a positive impact on the export orientation of a firm.

## Research Method

According to the Small and Medium Enterprise Administration within the Ministry of Economic Affairs in Taiwan, the definition of an SME is a manufacturing firm with a paid-in capital of NT\$ 80 million (US\$ 2.42 million) or less, with the number of regular employees less than 200 (see <http://www.moeasmea.gov.tw/>). The population for this study comprised Northern Taiwanese firms listed in the Electrical and Electronic Manufacturers' Association (TEEMA) database. The total number of electrical and electronics manufacturing firms listed in TEEMA is over 10,000 (10,208 in 2008). We chose firms located in Northern Taiwan. Over 600 questionnaires were distributed, resulting in 150 responses. Of those received, 47 responses were removed because the firms were not SMEs or were unable to function independently. Thus, 103 SMEs were included in the final analysis. The key informants for the study were the managers most responsible for the decision to export/not export. Twenty five percent of the respondents were top managers in the firms, while the remainder of the respondents were senior and professional employees involved with the firm's decision process to export/not export. In our research, an *exporter* is a firm that is based in Taiwan and that export their products overseas from Taiwan. The definition of *non-exporter* is a firm that sells their products solely within Taiwan. The survey requested information about the following areas using absolute values, five-point Likert-type scales and yes/no type dichotomous variables developed/identified from the literature:

- Year of establishment, number of employees, exporting status (e.g. Philp, 1996; Wickramasekera *et al.*, 2004);
- Managerial perceptions/experiences regarding general benefits (e.g. Louter *et al.*, 1991; Morgan *et al.*, 1997; Kaynak *et al.*, 1984; Sullivan *et al.*, 1991, etc) or advantages associated with exporting (e.g. Styles *et al.*, 1994; Chen, 1999; Leonidou, 1995; Blomström *et al.*, 1998; Wei *et al.*, 2006, etc);
- Managerial perceptions/experiences regarding general barriers (e.g.; Kaynak *et al.*, 1984; Ford *et al.*, 1991; Lim *et al.*, 1993; Leonidou *et al.*, 1996, etc) or costs (e.g. Sullivan *et al.*, 1991; Owen, 1993; Lim *et al.*, 1993; Katsikeas *et al.* 1994; Li, 2001; Bobillo *et al.*, 2007, etc) associated with exporting; and
- The management profile (e.g. Brooks *et al.*, 1982; Aaby *et al.*, 1989; Swift, 1991; Lim *et al.*, 1993; Calof *et al.*, 1994; Smith *et al.*, 1999; Beamish *et al.*, 1999; Chadee *et al.*, 2001; Leonidou *et al.*, 2004, etc).

This information was supplied by a key informant: the manager most responsible for the decision to export or not to export within the firm. A logistic regression model using an exporter (n=74) versus non-exporter (n=29) dependent variable was used to predict the export orientation of the firm. The results of the study are presented using a frequency distribution, a t-test, factor and reliability analyses, and a logistic regression analysis using SPSS software.

Subsequently, qualitative data was collected using telephone interviews. Ten firms were purposively selected (Saunders, Lewis & Thornhill, 2003) based on "misclassification" by the logit model. This process effectively allowed for the statistical significance of the model to be highlighted, whilst allowing for clarification of the characteristics of firms and their managers (Creswell, 2003). Out of the ten firms contacted, three firms declined to participate. Additional

insights on firm's characteristics were gleaned from secondary data including the TEEMA database.

### **Common method variance (CMV)**

Podsakoff, MacKenzie, Lee, & Podsakoff (2003) identified common method variance as a problem in behavioural research and highlighted the need to “do whatever...to control for it” Several methods have been proposed to avoid or correct CMV. The best strategy is to avoid or minimise the potential for CMV in the research design stage. In a recent article highlighting the issue of CMV, Chang, van Witteloostuijn, & Eden (2010) suggested using divergent sources of information for key variable and mixing the order of questions and using different scale types to minimise CMV. In our research, while not focusing on minimising CMV, for all intents and purposes the design followed the suggestions made by Chang *et al.* (2010). The dependent variable exporter/non-exporter is a dichotomous variable as opposed to other variables such as attitudinal variables that were measured using a five point likert scale, others were based on absolute value (sales, age of managers and the firm...).

Given the centrality of measuring the dependent variable, a number of steps were taken to validate the dependent variable i.e having international sales or markets to substantiate the classification as an exporter (and to the truthfulness of the respondent's responses). In addition, this classification was cross validated with external data sources (including TEEMA database); after data modelling as highlighted earlier some firms were contacted to account for misclassification in the model. We also had a relatively complicated model consisting of number of underlying constructs where respondents were unlikely to have been guided by a cognitive map (Chang *et al.*, 2010).

### ***Research context: The Taiwanese electronics industry***

During the past decade, the electronics industry in Taiwan has experienced a steady growth rate of around 5 percent, driven by success in tapping into international markets. Given the importance of this industry, the Executive Yuan (the Taiwanese Cabinet) decided to make electronics a priority area of growth because the global market was anticipated to rapidly expand (Electrical Industry Yearbook, 2006). The industry has developed in six major stages: the industry establishment stage (1948-1960), the industry development stage (1961-1970), the information industry development stage (1971-1980), the strategic industry stage (1981-1990), the internationalization stage (1991-2000), and the digital and Internet stage (2000-present) (Mechanical Industry Yearbook, 2005; Taiwan Electrical and Electronic Manufacturers' Association [TEEMA], 2008). There is close synergy between Stage 5 and 6. Within this study, we focus on the internationalization (export) development of the industry in an increasingly competitive international environment.

The products produced by the Taiwanese electronics and electrical industry include heavy electric machinery, refrigeration and air-conditioning equipment, household electrical appliances, computers, communication equipment, personal computer boards, power supply equipment, illumination devices, semiconductors, electron parts, optoelectronic products, and information application software, etc (see TEEMA website, 2008). Although Taiwan was historically perceived as a low-cost producer, it now faces increasing competition from countries such as China, India, and Vietnam. However, as the Ministry of Finance (2008) highlights, for almost two decades the Taiwanese electronics industry has sustained growth in the export of electronic products, compared to other associated products such as household electrical appliances. For example, the export value of electronic products has grown from an annual figure of \$8.6 billion in 1992 to \$63 billion in 2008. Further, according to information



presented by the Small and Medium Enterprise Administration in the Ministry of Economic Affairs, the percentage of export value generated by manufacturing SMEs compared to the total number of manufacturing firms is 18.4% in 2007. This percentage is reasonably stable, fluctuating between 15% and 20% from 2001 to 2007 (see <http://www.moeasmea.gov.tw>). There were 133,301 manufacturing SMEs in 2007, a value that has fluctuated between 132,354 and 137,751 in the six years prior (see <http://www.moeasmea.gov.tw>). This study aims to provide guidance to firms and export promotion agencies about how Taiwanese SMEs' export successes can be maintained.

### **Data analysis method**

The major analysis involved a two-stage process. The aim of this analysis was to gain a better understanding of the factors perceived to inhibit or aid the market expansion of the Taiwanese electronics industry. In the first stage, we reduced the data to a small number of theoretically plausible underlying variables that can be entered into a logistic regression analysis. Principal-axis factor analysis was conducted to identify underlying constructs from sets of interrelated items. Factors were extracted and then interpreted using a varimax rotation. Further, a t-test was used to identify the perceived differences between exporting firms and non-exporting firms. A single managerial characteristic was included in our model because preliminary analysis indicated that within the Taiwanese electrical and electronics industry context, "fluency in foreign language" (labeled as *FLUFL*) is important.

In the second stage, we conducted a logistic regression analysis. Logistic regression has a number of desirable features for examining the decision to export, but it predominately enables a direct estimation of the probability of an event occurring. For this research, we estimate that the probability that a firm will be involved in export activity using the parameter estimates of the model. For more than one independent variable, the model can be written as follows:

The probability of exporting =  $1 / 1 + e^{-Z}$   
 where  $Z$  is the linear combination,  $Z = B_0 + B_1X_1 + B_2X_2 + \dots + B_pX_p$ ,  
 $e$  is the base of the natural logarithms,  
 $B_0 \dots B_p$  are coefficients estimated from the data, and  
 $X_1 \dots X_p$  are the independent variables.

Hence, we use the following equation to be our model:

Exporter =  
 $B_0 + B_1BENEXP + B_2FSFAC + B_3INBARR + B_4INPCST + B_5FLUFL + B_6COMMIT$ .

Prior to the analysis we standardized the factor analysis and reliability analysis of our data. The conceptual framework is illustrated in Figure 1.

(Insert Figure 1 here)

### **Findings**

In this section, the findings of the study are discussed. These findings report the summary statistics and impacts of eight separate constructs: (1) length of time within the industry, (2) number of employees, (3) international markets, (4) perceived benefits and advantages of exporting, (5) factors inhibiting export activity, (6) firm's substantial commitment, (7) managerial characteristics, and (8) feature differences between exporters and non-exporters.

### ***Length of time within the industry***

The results of the survey show that one firm has been in existence 50 years, around 73 percent have been in existence for less than 30 years, and 26 percent of the firms had been in existence less than 10 years. Surprisingly, there is no significant difference in the average length of time within the industry between of exporters and non-exporters ( $F=0.631$ ,  $Sig=0.429$ ).

### ***Number of employees***

While this study focuses on SMEs, the Taiwanese electronics industry consists of many large firms with over 1,000 employees. In fact, in the original sample there are six firms with over 10,000 employees. These firms were excluded from our analysis as they are not SMEs. Virtually all of the large firms are engaged in international business. However, as this study demonstrates, many SMEs are also successfully engaged in international business.

### ***International markets***

According to the Ministry of Economic Affairs (2008), the top four countries Taiwan SMEs export to were China, Hong Kong, the USA, and Japan (see <http://www.mof.gov.tw>). The respondents within the exporting firms were asked to indicate their first international market and the market they entered most recently. Eighteen of the firms targeted China as their first international market, followed by the United States ( $n=7$ ) and Japan ( $n=4$ ). For other firms, the first international market ranged from Thailand to Turkey to South Africa. The most recently-entered markets range from United States to Japan to Europe.

### ***Perceived benefits and advantages of exporting***

As indicated in the review of literature, empirical research suggests that favorable expectations of exporting on the part of management are important in explaining the export behavior of firms (Bilkey *et al.*, 1977). Consequently, the survey contained seven statements relating to the benefits of exporting (forming a factor labeled *BENEXP*). Respondents were asked to indicate their perceptions regarding these statements (see Table 1), irrespective of their current status as an exporter or a non-exporter. As a summated scale, the factor loadings of each item exceeded 0.6, while the  $\alpha$  values of each item-to-total correlation exceeded 0.6.

Further, the study finds five statistically significant items that differentiate between exporters and non-exporters: (1) exports add a prestigious image to the firm, (2) exporting enables the exploitation of economies of scale, (3) exports add to the firm's overall profitability, (4) exports allow diversification of markets, and (5) exporting reduces the impact of a domestic economic downturn. Irrespective of the export behavior of the firm, however, the majority of respondents believe that exporting is beneficial. Thus, it appears that some managers of firms may have made a deliberate decision not to export, whereas many others appear to be working towards or are interested in establishing or expanding exports.

(Insert Table 1 here)

The respondents were also asked to indicate the importance of eight firm-specific items that enhanced their firm's competitiveness in the marketplace (forming a factor labeled *FSFAC*). These items are listed in Table 2. As Table 2 shows, *FSFAC* is identified using factor analysis.

All factor loadings exceed 0.6, while the  $\alpha$  values of each item-to-total correlation exceed 0.5. Hence, the factor appears to be appropriate for use in the logistic regression analysis.

Out of these eight items, five show significant difference (at the 95 percent confidence level) between exporters and non-exporters. However, the fact that both exporters and non-exporters believe that these factors contribute to the firm's competitiveness in the marketplace (mean value > 3) is possibly a reflection on the highly competitive nature of the Taiwanese electronics industry. Exporting firms consider that they produce high-quality, unique products with quality packaging, better internet marketing skills, and well-established networks of distributors.

(Insert Table 2 here)

### ***Factors inhibiting export activity***

The questionnaire contained nine statements relating to the barriers to exporting (forming a factor labeled as *INBARR*). Respondents were asked to indicate their perceptions regarding these statements (see Table 3), irrespective of their current status as an exporter or a non-exporter. All item factor loadings exceeded 0.6, while the  $\alpha$  values of each item-to-total correlation exceeded 0.6.

In response to questions on possible inhibiting factors to exporting, the majority of firms identify “risks involved in selling abroad” as the major barrier. Although this was identified as the main inhibiting factor, non-exporters report it more strongly than exporters. “Problems in selecting a reliable foreign distributor” are also a constraint for non-exporters, which was significantly different to exporters. Similar trends are exhibited for “unfamiliar foreign business practices”, “low priority afforded to export market development within the company”, and “management’s lack of knowledge and experience in export matters”.

(Insert Table 3 here)

In order to gauge the possible costs that could inhibit exporting (a factor labeled as *INPCST*), responses were sought to eleven questions (see Table 4). The factor loadings of each item exceeded 0.6, while the  $\alpha$  values of each item-to-total correlation exceeded 0.6. The item responses were not significantly different between exporters and non-exporters, aside from the responses relating to raw materials. Exporters perceived that raw material cost is a more inhibiting factor than non-exporters did. Most respondents identified “international shipping/airfreight”, “raw materials”, “compliance with stringent export regulation”, and “insurance associated with exports” as the main cost inhibitors for the Taiwanese electronics industry. According to the respondents, when Taiwanese SMEs face problems finding skilled labour or when the cost of recruiting and retaining such human resources becomes prohibitive, there is a tendency for the company to move offshore. This is consistent with the reasons cited by many companies from developed countries when they move their activities offshore.

(Insert Table 4 here)

### ***Commitment to exporting***

To assess firm substantial commitment, we integrated four questions found in the literature that relate to management commitment (a factor labeled as *COMMIT*). The values of KMO and significance are 0.823 and 0.000 respectively, indicating adequate sampling and reliability (see

Table 5). All of the items show significant differences between exporters and non-exporters. Exporters have a higher export commitment than non-exporters, which is a result that is consistent with other international studies.

(Insert Table 5 here)

### ***Managerial characteristics***

In prior studies conducted in the United States and Australia, the characteristics of the firm's main decision-maker are seen as important to the internationalization behavior of the firm. In a study conducted in China, Wu and Leung (2005) found that a link exists between managerial characteristics, improvements in firm competitiveness, and the decision to export. In this study, all of the managers are Taiwanese. In terms of gender, over 87 percent of the valid responses (n=94) indicate that the key decision-maker is male. Although only 12 percent of firms have a female as the key decision-maker, this percentage is higher than that of most Western countries. In terms of age, respondents vary from 24 to 65 years of age, with more than 50 percent of the managers being over 40 years of age. There is no significant difference between the mean age of the managers of exporting firms and those of non-exporting firms. Studies conducted in Western countries find that younger managers tend to be more export-oriented.

In terms of the logit model, the significance of language is an interesting finding. In many other studies, the personal managerial characteristics of the firm's decision-maker, such as overseas work experience, training in export procedures, and tertiary education, are found to be significant (Philp, 1996). However, probing is needed to gauge the type of language skills that assist managers to be export-oriented. Despite this, this is an important finding in terms of government policies that aim to build an export culture within the country. For example, a policy could be proposed that promotes foreign language studies. This item mean showed a significant difference ( $T = -4.29^{***}$ ) between non-exporters (item mean = 0.24) and exporters (item mean = 0.66). Exporting firms have managers that are fluent in foreign languages compared to non-exporting firms.

### ***Factors differentiating exporter from non-exporter***

In order to profile the firms that have embarked on exporting against those that have not, we engaged in multivariate analysis using logistic regression. The correlation matrix is presented in Table 6, which shows no evidence of multicollinearity among the independent variables (Grapentine, 1997) and thus no critical issues prior to undertaking the logistic regression analysis (Morlini, 2006; Aguilera, Escabias, & Valderrama, 2006)). Based on the sample of 103 respondents, we were able to predict the probability that a firm will be an exporter with an accuracy of more than 69 percent. The Chi-Square and significance values of the Omnibus Tests of Model Coefficients are listed in Table 7 and indicate that the models are valid. In Table 7 five factors appear to significantly discriminate between an exporter and a non-exporter. They are Model 1, 2, 3, 5, and 6.

In the full model, *BENEXP* (benefits of exporting), *FLUFL* (fluency in foreign languages), and *COMMIT* (firm's substantial commitment) appear significant to the firms' export activity. While the other four factors are not deemed to be significant, we find that exporters have a positive outlook on *FSFAC* (advantages of exporting), *BENEXP*, *COMMIT*, and *FLUFL*, but are less concerned about *INPCST* (costs that inhibit exporting). *INBARR* (barriers inhibiting exporting) is negatively related to export activity, which means that non-exporters perceive greater barriers to exporting than exporters. The binary logistic regression results supported

$H_1$ ,  $H_2$ ,  $H_3$ ,  $H_5$ , and  $H_6$ , but did not support  $H_4$ . Figures 2 and 3 show the clarified results of the observed groups for the full model and final model. In Table 7, most of predicted probabilities of the models are over 70%, except for Model 3. Due to the negative effect of *INBARR*, the predictive probability of Model 3 is 69.9%. The predictive probability of the full model is 88.3%, and the predictive probability of the final model is 85.4%. Model 6, which has only one factor (*COMMIT*), is the best model and its predictive probability is 82.5%. Hence, enterprises' substantial commitment is the most important factor in the export decisions of SMEs in Taiwan.

(Insert Table 6 here)

(Insert Table 7 here)

In the final reduced model (presented in Table 7), three variables (*BENEXP*, *COMMIT*, and *FLUFL*) are able to classify firms into exporters and non-exporters with a probability of 85.4%. Figure 2 and 3, which show predicted probabilities, illustrate a good concentration of exporters and non-exporters at each end of the figure, indicating good model fit. Given that misclassification is expected, there are some non-exporters that are seen as strong exporters. This is explained by the fact that these non-exporters manufacture components for midstream or half-finished products that will be sold overseas by intermediaries; thus, they are non-exporters but support exporting. Essentially, these SMEs are acting as contract manufacturers. Figure 4 shows the findings and hypotheses, confirmed by this research. Enhancing factors (i.e. perceived benefits/advantages of exporting) and managerial factors (i.e. management characteristics/commitment) both support the export decision but inhibiting factors (i.e. perceived barriers of exporting) obstruct the export decision of Taiwanese SMEs.

(Insert Figure 2 here)

(Insert Figure 3 here)

(Insert Figure 4 here)

## Discussion and Conclusion

As with many studies conducted internationally, this study attempts to explain what differentiates an exporting firm from a non-exporting firm within Taiwanese electronics SMEs. However, focusing on a single industry enabled a degree of experimental control. This allowed for the more holistic examination of the firm-specific and managerially related variables that affect the internationalization process. It also clarified some of the contradictory findings prevalent within the literature in terms of SME internationalization (Caviello & MacAuley, 1999). The major findings of this study point to a positive outlook with regard to export market expansion based on positive managerial perceptions and international orientation of Taiwanese managers within the electrical and electronic industry. Naturally this positive outlook is tempered by the current global market downturn. More than 50 percent of the non-exporters indicated their desire to develop export markets. If these companies aim to be successful exporters, improving the quality of their products, their marketing skill, and their distributor network will be important factors. These are the key attributes that differentiate exporters and non-exporters in terms of their competitiveness in the market.

In our research, exporters perceive the benefits of exporting to be the increased prestige for the firm, the exploitation of economies of scale, an addition to the firms' overall profitability, the diversification of markets, and a reduction of the impact of a domestic economic downturn (compared to the impact on non-exporters). Due to the limited domestic demand in island economies such as Taiwan, the movement offshore of larger Taiwanese manufacturers, and the promotion of international trade by the Taiwanese government results in Taiwanese SMEs actively seek foreign trade opportunities or choose exports to match the cooperative needs of larger firms that establish factories overseas. According to some of the respondents, non-exporters keen on exporting are constrained by low competitiveness (e.g. low product quality or non-uniqueness of products, ordinary quality of packaging, a lack of marketing skill, and no established network of distributors). Exporters are significantly less concerned about these issues than non-exporters. As leading researchers in International Business have argued, the operational flexibility of multinational firms, resulting from their internationally-dispersed network of affiliates, confers arbitraging advantages (Kogut & Kulatilaka, 1994; Rugman *et al.*, 2004). For SMEs, having network relationships is equally important in assisting with the firm's internationalization (Lee & Chen, 2003). In future research, this is an area that needs further exploration.

The major constraints of exporting appear to be the perceived risks involved in selling abroad and in selecting a reliable foreign distributor for non-exporters. It also appears that firms not interested in exports have made a deliberate decision not to export, for reasons such as insufficient market knowledge, lack of a network of distributors, or misgivings about the risks involved in selling abroad. Further, low competitiveness leads non-exporters to afford low priority to export markets, which becomes a barrier to non-exporter firms. Factors including lack of knowledge and experience in export matters, unfamiliar foreign business practices and problems in selecting a reliable foreign distributor are other factors that inhibit exporting. Inhibiting cost factors such as the cost of labor, domestic transport and other inputs are not identified as important inhibitors, possibly due to the competitive economic environment in Taiwan. The results support Sim and Pandian's (2007) study: the internationalization strategies of Taiwanese firms were founded on cost-based competencies and location-based advantages. In our study, international shipping/airfreight and raw material costs are the main inhibiting cost factors for exporters. In general, exporters are more concerned with transactions costs, while non-exporters are more concerned about the costs associated with export regulations and international shipping/airfreight.

In terms of the management profile, our results contrast with findings from Western countries (Leonidou *et al.*, 1998), where some studies found younger managers to be more internationally-oriented. There is no significant difference between the average age of the manager in the exporting firms and the non-exporting firms. Further, while the percentage of female managers is low, it is still higher than in other countries. It also appears from our follow-up interviews that Taiwan's exporting firms have managers who are ambitious (i.e. achieving company goals of growth and power), and internationally oriented with technological background/qualifications. In addition, Taiwanese managers have an understanding of Western (i.e. American), Oriental (i.e. Japanese), and traditional Taiwanese (i.e. Chinese) management styles. This is an important finding and possibly unique to Taiwan in having this broad based internationally oriented skill set. Thus the Taiwanese managers tend to be very proactive in responding to both environmental factors and institutional pressures from the home country in aggressively internationalizing their firms (Cheng & Yu, 2008). The findings from the logit model suggest that, in terms of acceleration of the internationalization process of Taiwanese SMEs, non-exporting firms (that have a high probability value of exporting), could equip their managers with relevant language skills and enhance their

enthusiasm and commitment towards exports (in terms of export planning, international experience, and resource commitment).

The logistic regression model is able to predict with almost 88 percent accuracy the probability of a firm being an exporter. International involvement is more likely where the management team is willing to commit resources, has an interest, and is psychologically committed to export activity, as well as having a command of a foreign language (i.e. language other than Chinese). In Figure 2 and 3, the histograms of predicted probabilities indicate that a number of non-exporters are predicted to be exporters, although at this stage they are non-exporters. It is important to more deeply explore the reason for this mis-classification. However, a preliminary follow-up indicated that Taiwan's electrical and electronics industry has an extensive cooperative network. Over fifty percent of SMEs' export activities are linked with the requirements of the cooperative partners or corporations (TEEMA, 2008). Upstream, midstream, and downstream manufacturers cooperate in the value chain. Taiwan's SMEs have strong structural and cooperative relationships with large electronics and electric companies. Thus, the supply chain of the industry is integrated and the resulting clustering effect makes it a globally competitive industry. This finding is consistent with Sim and Pandian's (2003) study.

If the model proves sufficiently robust after further analysis, it may be possible to develop a concise questionnaire that enables Taiwanese export promotion agencies to identify non-exporters with a high potential to export. This is particularly important given the pivotal role played by government agencies in promoting the establishment and international expansion of the Taiwan electronics industry. Another important factor that government agencies and educational institutes must focus on is maintaining international expansion by assisting in promoting language studies and an awareness of international business cultures. Smaller manufacturing firms need to recognize the critical role of relationship management in the smooth running of their business operations and aim to build long-lasting working relationships with both domestic and foreign buyers (Leonidou *et al.*, 2004). In the electronics sector, our research indicates that firms aspiring to be exporters need to have or gain managers with international knowledge and experience, good business networks, and high business competitiveness. To improve the export culture within Taiwan's SMEs, the government needs to provide appropriate training, increase government support by such methods as reducing transaction costs, provide market information for various countries, establish good cooperative business networks for firms, and assist SMEs to improve their products and marketing competitiveness. Two factors shown to be positively associated with Taiwanese SMEs' internationalization performance were investment in research and development (Chiao, Yang, & Yu, 2006), and expertise in targeting markets in developed countries (Chen & Hsu, 2009).

In the future, with a better understanding of the factors that differentiate between exporters and non-exporters within the electronics industry, a suitable model of export behavior for the industry can be developed. This model would take into consideration other important variables such as additional management attributes and other firm-specific variables. Further, Steier (2009) suggests that understanding models of corporate governance in East Asia (i.e. institutional context) matters and that familial capitalism (Carney, 2007) is an important feature of most contexts. Countries vary in the extent to which corporate governance institutions are held accountable, which can impact entrepreneurial activity, including export orientation (Terjesen & Hessels, 2009). Given the high percentage of familial capitalism in Taiwanese electronics SMEs, there is the potential to study the effect of familial capitalism and corporate governance types on firms' export decisions and internationalization in the future.

There are several limitations to this study, including a lack of generalizability of the findings given the sample, the sample bias that results from the small sample size, the concentration of respondents from Northern Taiwan, and the inability to clearly identify the type of product that

the SME is producing. While the study sample is limited, its homogeneity with respect to industry, location, and general firm size does yield valuable insights into this important Taiwanese industry. In addition, the research raises additional questions about the importance of networks and the patterns of SME internationalization.

## References

- Aaby, N. E., & Slater, S. F. 1989. Management influences on export performance: A review of the empirical literature 1978-1988. *International Marketing Review*, 6(4): 7-26.
- Aguilera, A.M., Escabias, M. & Valderrama, M. J. 2006. Using principal components for estimating logistic regression with high-dimensional multicollinear data. *Computational Statistics and Data Analysis*, 50(8): 1905-1924.
- Ahmed, Z. U., Julian, C. C., Baalbaki, I., & Hadidian, T. V. 2006. Firm internationalization and export incentives from a Middle Eastern perspective. *Journal of Small Business and Enterprise Development*, 13(4): 660-669.
- Amine, L. S., Cavusgil, S. T. 1983 Exploring Strategic Aspects of Export Marketing. *International Marketing Review*, 1: 5-11.
- Andersen, O. 1993. On the internationalization process of firms: A critical analysis. *Journal of International Business Studies*, 24(2): 209-231.
- Ariyawardana, A. 2003. Sources of competitive advantage and firm performance: The case of Sri Lankan value-added tea producers. *Asia Pacific Journal of Management*, 20(1): 73-90.
- Axinn, C. 1988. Export performance: Do managerial perceptions make a difference?. *International Marketing Review*, 5(2): 61-71.
- Barney, J. B. 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1): 99-120.
- Beamish, P. W., Karavis, L., Goerzen, A., & Lane, C. 1999. The relationship between organizational structure and export performance. *Management International Review*, 39(1): 37-54.
- Bilkey, W. J. 1978. An attempted integration of the literature on the export behavior of firms. *Journal of International Business Studies*, 9(Spring-Summer): 33-46.
- Bilkey, W. J., & Tesar, G. 1977. The export behavior of smaller-sized Wisconsin manufacturing firms, *Journal of International Business Studies*, 8(Spring-Summer): 93-98.
- Blomström, M., & Kokko, A. 1998. Multinational corporations and spillovers. *Journal of Economic Surveys*, 12(2): 1-31.
- Bobillo, A. M., Sanz, J. A. R. , & Gaite, F. T. 2007. The impact of relative share of unit labour costs and technology variables on firm's export behavior. *The Business Review*, 7(1): 90-97.
- Brooks, M., & Rosson, P. 1982. A study of export behaviour of small and medium-sized manufacturing firms in three Canadian provinces, in M. Czinkota and G. Tesar (eds.), *Export Management: An International Context* Praeger Publishers: New York, 39-54.
- Calof, J., & Beamish, P. 1994. The right attitude for international success. *Business Quarterly*, 59(1): 105-110.
- Calof, J., & Beamish, P. 1995. Adapting to foreign markets: Explaining internationalization. *International Business Review*, 4(2): 115-131.
- Carney, M. 2007. Minority Family Business in Emerging Markets: Organization Forms and Competitive advantage. *Family Business Review*, 20(4), 289-300.
- Coviello, N. E. & McAuley, A. 1999. Internationalisation and the Smaller Firm: A Review of Contemporary Empirical Research. *Management International Review*, 39(3): 223-56.

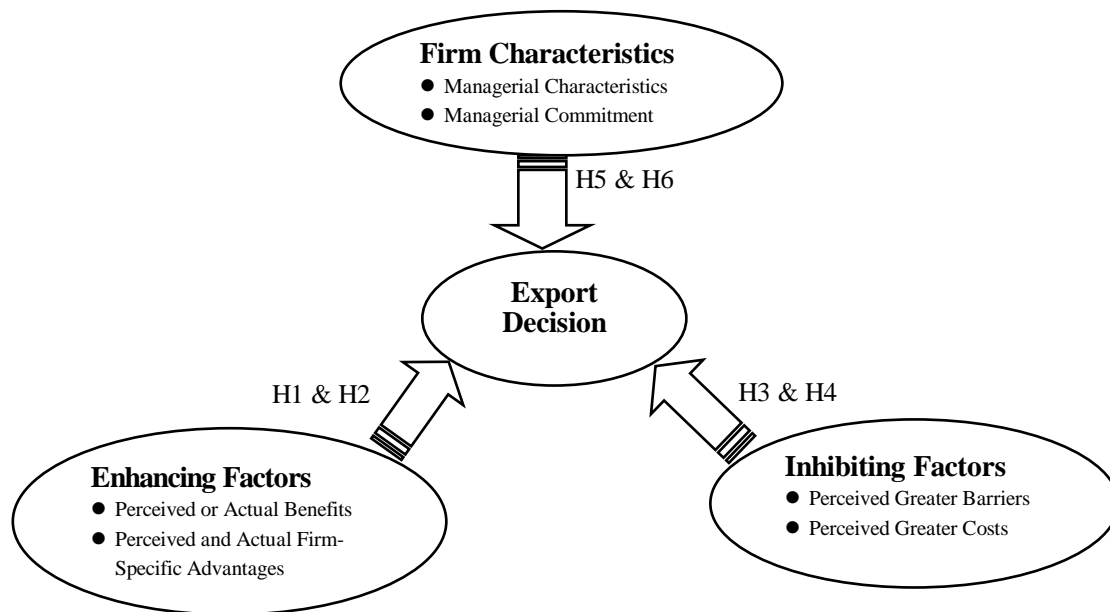


- Cavusgil, S. T. 1980. On the internationalization process of firms. *European Research*, 8: 273-281.
- Cavusgil, S. T., & Nevin, J. R. 1981. Internal determinants of export marketing behavior: An empirical investigation. *Journal of Marketing Research*, 18(February): 114-119.
- Cavusgil, S.T. and Zou, S. 1994. Marketing strategy-performance relationship: An investigation of the empirical link in export market ventures. *Journal of Marketing*, 58(1): 1-21.
- Chadee, D., & Kumar, R. 2001. Sustaining the international competitive advantage of Asian firms: A conceptual framework and research propositions. *Asia Pacific Journal of Management*, 18(4): 461-480.
- Chang, S.J., van Witteloostuijn, A., & Eden, L. (2010). Common method variance in international business research, 41(2): 178-184.
- Chen, W. H. 1999. The manufacturing strategy and competitive priority of SMEs in Taiwan: A case survey. *Asia Pacific Journal of Management*, 16(3): 331-349
- Chen, H., & Hsu, C.W. 2009. Internationalization, resource allocation and firm performance. *Industrial Marketing Management*, doi:10.1016/j.indmarman.2009.10.001.
- Cheng, H. L., & Yu, J. C. M. 2008. Institutional pressures and initiation of internationalization: Evidence from Taiwanese small- and medium-sized enterprises. *International Business Review*, 17: 331-348.
- Chetty, S. K., & Hamilton, R. T. 1993. Firm-level determinants of export performance: A meta-analysis. *International Marketing Review*, 10(3): 26-34.
- Chiao, Y. C., Yang, K. P., & Yu, C. M. J. 2006. Performance, internationalization, and firm-specific advantages of SMEs in a newly-industrialized economy. *Small Business Economics*, 26: 475-492.
- Coase, R. H. 1937. The Nature of the Firm. *Economica*, 5: 386-405.
- Creswell, J. W. 2003. *Research Design: Qualitative, Quantitative, and Mixed Method Approaches* (2nd ed.). California: Sage Publications.
- Crick, D., & Katsikeas, C. S. 1995. Export practices in the UK clothing and knitwear industry. *Marketing Intelligence & Planning*, 13(7): 13-22.
- Czinkota, M. R., & Johnston. W. J. 1981. Segmenting U.S. Firms for Export Development. *Journal of Business Research*, 9: 353-365.
- Czinkota, M. R., & Ronkainen, I. A. 2001. *International marketing* (6th ed.). Fort Worth, TX: Hartcourt College Publishers.
- Dichtl, E., Leibold, M., Koglmayer, H. G., & Müller, S. 1984. The export decision of small and medium sized firms: A review. *Management International Review*, 24(2): 49-60.
- Doole, I., Grimes, T., & Demack, S. 2006. An exploration of the management practices and processes most closely associated with high levels of export capability in SMEs. *Marketing Intelligence & Planning*, 24(6): 632-647.
- Dunning, J. H. 1988. The eclectic paradigm of international production: A restatement and some possible extensions. *Journal of International Business Studies*, 19(1): 1-31.
- Electrical Industry Yearbook. 2006. Industry & Technology Intelligence Services, Ministry of Economic Affairs, R.O.C.
- Fina, E., & Rugman, A. M. 1996. A test of internalization theory and internationalization theory: The Upjohn Company. *Management International Review*, 36(3): 199-213.
- Ford, D., & Leonidou, L. 1991. Research Developments in International Marketing: A European perspective, in: Paliwoda, S. (ed), *New perspectives in International Marketing*. London: Routledge.
- Grapentine, T. 1997. Managing multicollinearity. *Marketing Research*, 9(3): 10-21.

- Graham, P. G. 1999. Small business participation in a global economy. *European Journal of Marketing*, 33(1/2): 88-102.
- Hessels, S. J. A., & van Stel, A. J. 2007. Export orientation among new ventures and economic growth. Erasmus Research Institute of Management, ERIM Report Series Reference No. ERS-2007-008-ORG.
- Johanson, J., & Vahlne, J. E. 1977. The internationalization process of the firm - A model of knowledge development and increasing foreign market commitments. *Journal of Business Studies*, 8(1): 23-32.
- Katsikeas, C., & Morgan, R. 1994. Differences in perceptions of exporting problems based on firm size and export market experience. *European Journal of Marketing*, 28(5): 17-35.
- Kaynak, E., & Kothari, V. 1984. Export behaviour of small and medium-sized manufacturers: Some policy guidelines for international marketers. *Management International Review*, 24(2): 61-69.
- Kogut, B., & Kulatilaka, N. 1994. Operating flexibility, global manufacturing, and the option value of a multinational network. *Management Science*, 40(1): 123-139.
- Lee, J.R., and Chen, J.S. 2003. Internationalization, local adaptation, and subsidiary's entrepreneurship: An exploratory study on Taiwanese manufacturing firms in Indonesia and Malaysia. *Asia Pacific Journal of Management*. 20(1), 51-72.
- Leonidou, L. C. 1995. Export barriers: non-exporters' perceptions. *International Marketing Review*, 12(1): 4-25.
- Leonidou, L. C., Kaminarides, J. S., & Hadjimarcou, J. 2004. An analysis of U.S. small and medium-sized manufacturers' international business relationships. *Thunderbird International Business Review*, 46(5): 545-574.
- Leonidou, L. C., Katsikeas, C. S., & Piercy, N.F. 1998. Identifying managerial influences on exporting: Past research and future directions. *Journal of International Marketing*, 6(2): 74-102.
- Leonidou, L. C., & Katsikeas, C. S. 1996. The export development process: An integrative review of empirical models. *Journal of International Business Studies*, 27(3): 517-551.
- Li, L. 2001. Networks, transactions, and resources: Hong Kong trading companies' strategic position in the China market. *Asia Pacific Journal of Management*, 18(3): 279-293.
- Lim, J., Sharkey, T., & Kim, K. 1993. Determinants of international marketing strategy. *Management International Review*, 33(2): 103-120.
- Louter, P., Ouwerkerk, C., & Bakker, B. 1991. An inquiry into successful exporting. *European Journal of Marketing*, 25(6): 7-23.
- Lu, Y., & Yao, J. 2006. Impact of state ownership and control mechanisms on the performance of group affiliated companies in China. *Asia Pacific Journal of Management*, 23(4): 485-513.
- Mechanical Industry Yearbook. 2005. Industry & Technology Intelligence Services, Ministry of Economic Affairs, R.O.C.
- Meredith, L. U. S. 1984. Multinational investment in Canadian manufacturing industries. *Review of Economics and Statistics*, 66(February): 111-119.
- Ministry of Economic Affairs. 2008. The move research on Taiwan industrial value supply chain – Evidence from the move between Taiwan and China. [http://publication.tier.org.tw/tierthebook.asp?doc\\_id=52007123125&source=tierpt](http://publication.tier.org.tw/tierthebook.asp?doc_id=52007123125&source=tierpt). Accessed May 20, 2008.
- Morgan, R. E., & Katsikeas, C. S. 1997. Obstacles to export initiation and expansion. *Omega*, International Journal of Management Science, 25: 677-690.
- Morlini, I. 2006. On Multicollinearity and Concurvity in Some Nonlinear Multivariate Models. *Statistical Methods & Applications*, 15(1): 3-26.

- Norvell, W., Andrus, D. M., & Gogumalla, N. V. 1995. Factors related to internationalization and the level of involvement in international markets. *International Journal of Management*, 12(1): 63-77.
- Owen, K. 1993. *Business Growth and Export Development: Issues for Firms in Rural Areas*. The Rural Development Centre, University of New England, Armidale.
- Podsakoff, P., MacKenzie, S., Lee, J., & Podsakoff, N. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5): 879-903.
- Pavord, W. C., & Bogart, R. G. 1975. The dynamics of decision to export. *Akron Business and Economic Review*, 6(Spring): 6-11.
- Peng, M. W., & Ilinitich, A. 1998. Export intermediary firms: A note on export development research. *Journal of International Business Studies* 29(3): 609-620.
- Philp, N. 1996. The export propensity of the very small enterprise (VSE). *International Small Business Journal*, 16(4): 79-93.
- Philp, N. E. 1998. The export propensity of the very small enterprise (VSE). *International Small Business Journal*, 16(4): 79-93.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88: 879-903.
- Ramaswamy, K., Li, M., & Petitt, B. 2005. Who drives unrelated diversification? A study of Indian manufacturing firms. *Asia Pacific Journal of Management*, 21(4): 403-423.
- Reid, S. D. 1983. Firm internationalization, transaction costs, and strategic choice. *International Marketing Review*, Winter: 44-56.
- Rialp, A., Rialp, J., Urbano, D., & Villant, Y. 2005. The born-global phenomenon: A comparative case study research. *Journal of International Entrepreneurship*, 3: 133-171.
- Rugman, A. M., & Verbeke, A. 2004. A perspective on regional and global strategies of multinational enterprises. *Journal of International Business Studies*, 35(1): 3-18.
- Samiee, S., & Walters, P. G. P. 2002. Export education: perceptions of sporadic and regular exporting firms. *International Marketing Review*, 19(1): 80-97.
- Saunders, M., Lewis, P., & Thornhill, A. 2003. *Research Methods for Business Students* (3rd ed.). London: Prentice Hall.
- Sharkey, T. W., Lim, J. S., & Kim, K. I. 1989. Export development and perceived export barriers: An empirical analysis of small firms. *Management International Review*, 29(2): 33-40.
- Sim, A. B., & Pandian, J. R. 2007. An exploratory study of internationalization strategies of Malaysian and Taiwanese firms. *International Journal of Emerging Markets*, 2(3): 252-273.
- Sim, A. B., & Pandian, J. R. 2003. Emerging Asian MNEs and their internationalization strategies - Case study evidence on Taiwanese and Singaporean firms. *Asia Pacific Journal of Management*, 20(1): 27-50.
- Simmonds, K., & Smith, H. 1968. The first export order: A marketing innovation. *British Journal of Marketing*, 2: 93-100.
- Smith, A., & Zeithaml, C. 1999. The intervening hand: Contemporary international expansion processes of the regional Bell operating companies. *Journal of Management Inquiry*, 8(1): 34-64.
- Steier, L. P. 2009. Familial capitalism in global institutional contexts: Implications for corporate governance and entrepreneurship in East Asia. *Asia Pacific Journal of Management*, 26(3): 513-535.

- Styles, C., & Ambler, T. 1994. Successful export practice: The UK experience. *International Marketing Review*, 11(6): 23–47.
- Sullivan, D., & Bauerschmidt, A. 1989. Common factors underlying barriers to export: A comparative study in the European and US Paper industry. *Management International Review*, 29(2): 17-32.
- Sullivan, D., & Bauerschmidt, A. 1991. The “basic concepts” of international business strategy: A review and reconsideration. *Management International Review*, 31: 111-124.
- Swift, J. 1991. Foreign language ability and international marketing. *European Journal of Marketing*, 25(12): 36-49.
- Tai, D. W. S., & Hung, C. E. 2006. A study on relations between industrial transformation and performance of Taiwan’s small and medium enterprises. *Journal of American Academy of Business*, Cambridge, 8(2): 216-221.
- TEEMA, 2008. Taiwan Electrical and Electronic Manufacturers' Association, <http://www.teema.org.tw/>. Accessed April 8, 2008.
- Terjesen, S., & Hessels, J. 2009. Varieties of export-oriented entrepreneurial activity in ten Asian countries: The role of institutional structures. *Asia Pacific Journal of Management*, 26(3): 537-561.
- Terpstra, V., & Sarathy, R. 2001. *International Marketing*, U.S.A., San Diego, CA: Dryden Press.
- Vroom, V. H. 1964. *Work and Motivation*. New York: Wiley.
- Wei, Y., & Liu, X. 2006. Productivity spillovers from R&D, exports and FDI in China’s manufacturing sector. *Journal of International Business Studies*, 37(4): 544-557.
- Wickramasekera, R., & Oczkowski, E. 2004. Key determinants of the stage of internationalization of Australian Wineries. *Asia Pacific Journal of Management*, 21(4): 425-445.
- Wilkinson, I., & Barrett, N. 1987. Australian policies for trade promotion and assistance: review and evaluation. In *International Perspectives on Trade Promotion, Assistance* (Eds), Quorum Press, Westport, CT.
- Williamson, O. E. 1985. *The Economic Institutions of Capitalism*. New York: The Free Press.
- Wu, W. P., & Leung, A. 2005. Does a micro-macro link exist between managerial value of reciprocity, social capital and firm performance? The case of SMEs in China. *Asia Pacific Journal of Management*, 22(4): 445-463.
- Wu, F., Sinkovics, R. R., Cavusgil, S. T., & Roath, A. S. 2007. Overcoming export manufacturers’ dilemma in international expansion. *Journal of International Business Studies*, 38(2): 283-302.
- Yeung, H. W. -C. 2002. Entrepreneurship in international business: An institutional perspective. *Asia Pacific Journal of Management*, 19(1): 29-61.
- Zhang, C., Cavusgil, S. T., & Roath, A. S. 2003. Manufacturer governance of foreign distributor relationships: Do relational norms enhance competitiveness in the export market? *Journal of International Business Studies*, 34(6): 550-566.
- Zou, S., Taylor, C. R., & Osland, G. E. 1998. The EXPERF scale: A cross national generalized export performance measure. *Journal of International Marketing*, 6(3): 37-58.



**Figure 1** Conceptual framework

**Table 1** Benefits of exporting.

<i>BENEXP</i> (KMO: 0.882 <sup>***</sup> )	Factor loadings	Item-to-total correlation	Item Mean		<i>t</i> -test
			Non-exporter	Exporter	
Exporting gives a prestigious image to the firm	0.77	0.71	3.55	4.28	-4.19 <sup>***</sup>
Exporting helps overcome a limited home market	0.79	0.74	3.93	4.19	-1.42
Exporting enables the exploitation of economies of scale	0.77	0.72	3.83	4.26	-2.67 <sup>***</sup>
Exporting adds to the firm's overall profitability	0.77	0.72	3.41	4.35	-5.75 <sup>***</sup>
Exporting allows diversification of markets	0.69	0.64	3.72	4.22	-2.72 <sup>**</sup>
Exporting reduces the impact of a domestic economic downturn	0.74	0.69	3.72	4.12	-2.09 <sup>*</sup>
Exporting enables utilization of excess capacity	0.67	0.63	3.69	3.96	-1.41
Eigenvalues	4.30				
Cronbach's $\alpha$		0.89			

<sup>\*</sup>  $p < 0.05$ , <sup>\*\*</sup>  $p < 0.01$ , <sup>\*\*\*</sup>  $p < 0.001$ .

**Table 2** Firm-specific factors enhancing competitiveness.

<i>FSFAC</i> (KMO: 0.885 <sup>**</sup> )	Factor loadings	Item-to-total correlation	Item Mean		<i>t</i> -test
			Non-exporter	Exporter	
Perceived high quality of products	0.61	0.57	3.59	4.07	-2.57 <sup>*</sup>
Uniqueness of products	0.71	0.66	3.41	4.00	-2.68 <sup>**</sup>
Quality of packaging	0.67	0.64	2.97	3.57	-2.64 <sup>*</sup>
Marketing skills	0.81	0.77	3.28	3.88	-2.99 <sup>**</sup>
Good labor relations	0.69	0.64	3.52	3.68	-0.65
Reliable suppliers	0.76	0.72	3.59	3.91	-1.57
Innovative production skills	0.85	0.79	3.72	4.05	-1.62
Good network of distributors	0.72	0.68	3.45	3.91	-2.15 <sup>*</sup>
Eigenvalues	4.72				
Cronbach's $\alpha$		0.89			

<sup>\*</sup>  $p < 0.05$ , <sup>\*\*</sup>  $p < 0.01$ .

**Table 3** Factors inhibiting export activity.

<i>INBARR</i> (KMO: 0.862 <sup>***</sup> )	Factor loadings	Item-to-total correlation	Item Mean		<i>t</i> -test
			Non-exporter	Exporter	
The low priority afforded to export market development within the company	0.65	0.62	3.72	2.86	3.82 <sup>***</sup>
Management's lack of knowledge and experience in export matters	0.71	0.68	3.48	2.92	2.21 <sup>*</sup>
The limited quantities of stocks for market expansion	0.75	0.71	3.41	3.05	1.44
Lack of financial resources	0.69	0.66	2.86	2.99	-0.50
Unfamiliar foreign business practices	0.69	0.65	3.83	3.15	2.69 <sup>**</sup>
Difficulties in collecting payment from foreign markets	0.76	0.71	3.28	3.26	0.08
Problems in selecting a reliable foreign distributor	0.81	0.76	3.93	3.46	2.06 <sup>*</sup>
Risks involved in selling abroad	0.71	0.66	3.93	3.50	1.80
Inadequate market information	0.68	0.65	3.90	3.61	1.22
Eigenvalues	5.12				
Cronbach's $\alpha$		0.90			

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .



**Table 4** Costs perceived to inhibit export activity.

<i>INPCST</i> (KMO: 0.787 <sup>***</sup> )	Factor loadings	Item-to-total correlation	Item Mean		<i>t</i> -test
			Non-exporter	Exporter	
Labor costs	0.74	0.71	3.48	3.49	-0.02
Domestic transport	0.72	0.69	3.34	3.57	-1.04
International shipping/airfreight	0.67	0.64	3.69	3.93	-1.24
Raw materials	0.68	0.66	3.34	3.89	-2.62*
Public utilities	0.80	0.77	3.45	3.69	-1.11
Domestic government charges	0.80	0.77	3.31	3.51	-0.97
Insurance associated with exports	0.77	0.74	3.55	3.66	-0.51
Compliance with stringent export regulations	0.71	0.68	3.72	3.61	0.56
Financing new plant capacity	0.69	0.65	3.41	3.69	-1.29
Employing managers with export skills/experiences	0.76	0.73	3.41	3.64	-1.21
Export documentation and procedures	0.72	0.69	3.34	3.45	-0.42
Eigenvalues	6.37				
Cronbach's $\alpha$		0.93			

\*  $p < 0.05$ , \*\*\*  $p < 0.001$ .

**Table 5** Commitment towards exporting.

<i>COMMIT</i> (KMO: 0.823 <sup>***</sup> )	Factor loadings	Item-to-total correlation	Item Mean		<i>t</i> -test
			Non-exporter	Exporter	
Planning towards exporting	0.79	0.76	2.66	3.78	-4.97 <sup>***</sup>
Management commitment towards exporting	0.94	0.89	2.66	3.89	-6.20 <sup>***</sup>
Resource commitment towards exporting	0.95	0.89	2.59	3.97	-7.15 <sup>***</sup>
International experience	0.78	0.74	2.52	3.89	-6.35 <sup>***</sup>
Eigenvalues	3.25				
Cronbach's $\alpha$		0.92			

<sup>\*\*\*</sup>  
 $p < 0.001$ .

**Table 6** Correlation analysis of discussion factors.

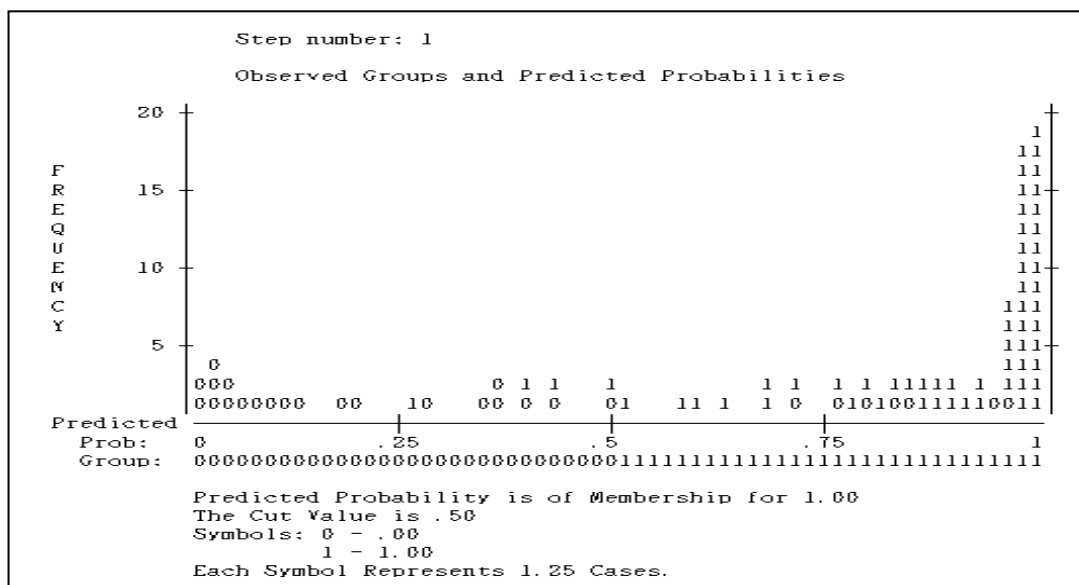
	Mean	Std.	<i>BENEXP</i>	<i>FSFAC</i>	<i>INBARR</i>	<i>INPCST</i>	<i>FLUFL</i>	<i>COMMIT</i>
<i>BENEXP</i>	-2.4E-16	0.95	1.000					
<i>FSFAC</i>	-6.8E-17	0.96	0.529**	1.000				
<i>INBARR</i>	1.7E-17	0.95	-0.076	0.041	1.000			
<i>INPCST</i>	-1.1E-16	0.96	0.383**	0.516**	0.389**	1.000		
<i>FLUFL</i>	-1.0E-16	1.00	0.013	0.117	-0.185	-0.088	1.000	
<i>COMMIT</i>	-1.4E-16	0.98	0.453**	0.485**	-0.107	0.443**	0.108	1.000

\*\*  
 $p < 0.01$ .

**Table 7** Binary logistic regression between exporters and non-exporters.

Factors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Full model	Final model
	B	B	B	B	B	B	B	B
<i>BENEXP</i>	0.92* (0.011)						1.12* (0.024)	0.76 (0.055)
<i>FSFAC</i>		0.64* (0.011)					-0.16 (0.743)	
<i>INBARR</i>			-0.54* (0.044)				-0.16 (0.780)	
<i>INPCST</i>				0.26 (0.267)			-0.72 (0.215)	
<i>FLUFL</i>					0.91*** (0.000)		1.29** (0.001)	1.28*** (0.000)
<i>COMMIT</i>						1.68*** (0.000)	2.14*** (0.000)	1.87*** (0.000)
Constant	1.08*** (0.000)	1.01*** (0.000)	0.99*** (0.000)	0.95*** (0.000)	1.12*** (0.000)	1.31*** (0.000)	1.90*** (0.000)	1.74*** (0.000)
-2 Log likelihood	109.24	115.42	117.89	121.19	107.16	85.27	60.93	65.42
Nagelkerke R Square	0.17	0.09	0.06	0.02	0.20	0.43	0.65	0.61
Chi-Square	13.19***	7.03**	4.56*	1.26	15.29***	37.18***	61.52***	57.03***
Predicted probabilities	73.8%	74.8%	69.9%	71.8%	71.8%	82.5%	88.3%	85.4%

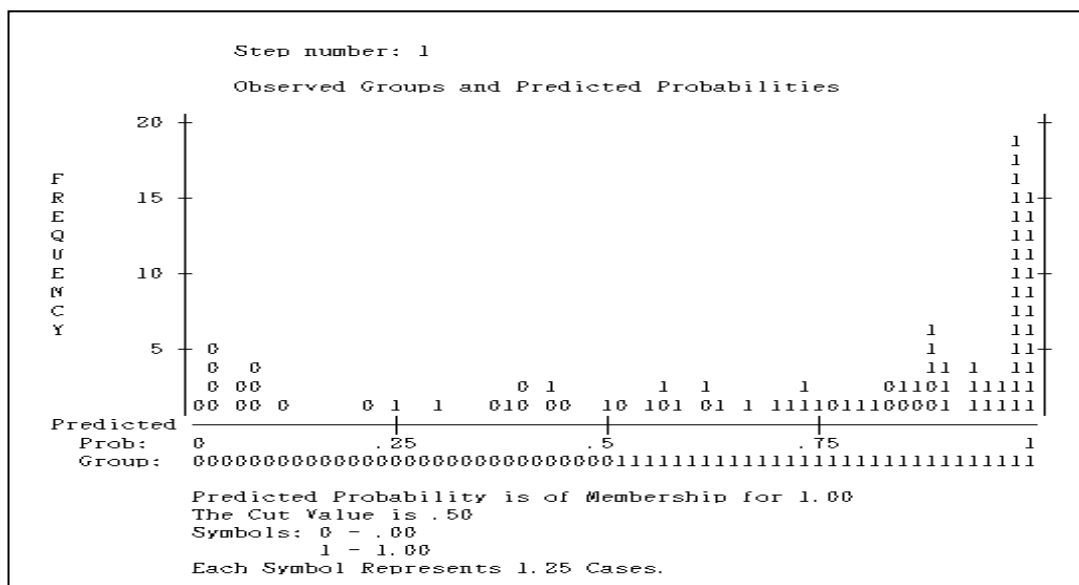
\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .



**Figure 2**  
Observe

d groups and predicted probabilities of full model

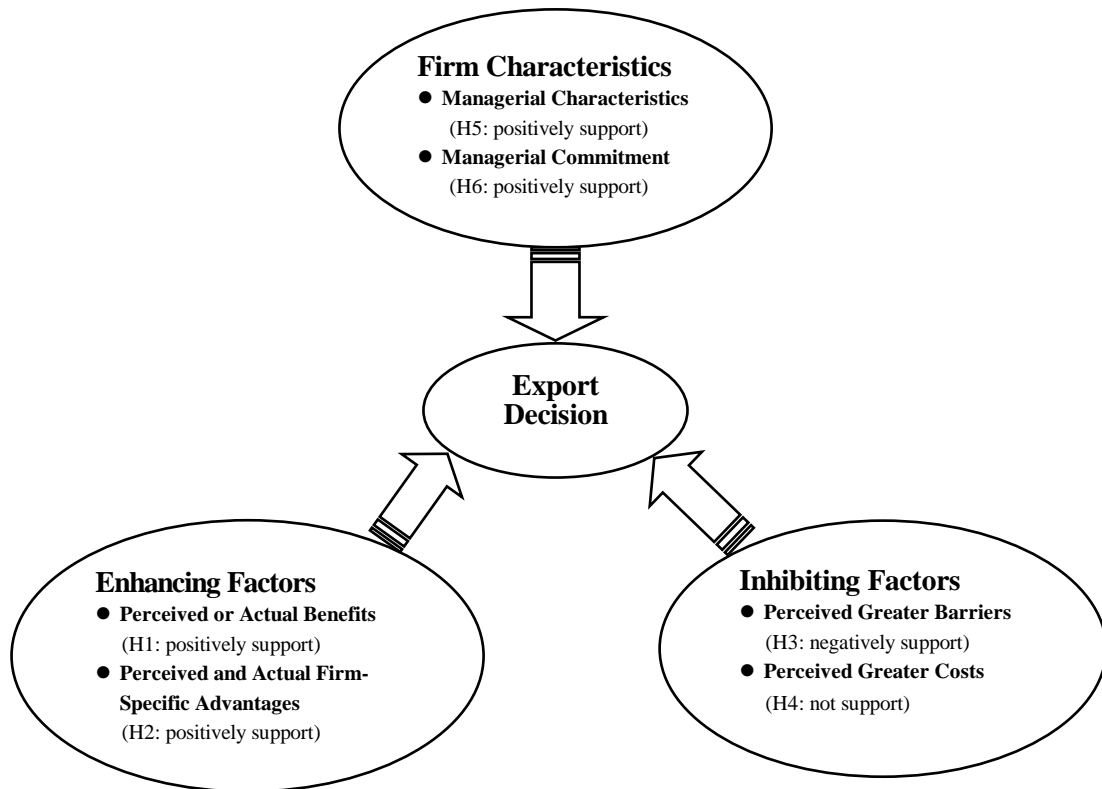
Note: Variable(s) entered on Step 1 include *BENEXP*, *FSFAC*, *INBARR*, *INPCST*, *FLUFL*, and *COMMIT*.



**Figure 3**  
Observe

d groups and predicted probabilities of final model

Note: Variable(s) entered on Step 1 include *BENEXP*, *FLUFL*, and *COMMIT*.



**Figure 4** Research findings and hypotheses